

Applicant : Lucien Alfred Couvillon, Jr.
Appl. No. : 10/678,337
Examiner : Jaworski
Docket No. : 701470.4069

REMARKS

Claims 1 has been amended, claims 11-24 and 26 have been cancelled and new claims 33 and 34 have been added. No new matter has been added. Claims 1-10, 25 and 27-34 are pending in the application. Applicant respectfully requests reconsideration.

Claim 1 has been amended to require "ultrasound microbubbles directly on the adhesion layer." Support for this amendment can be found, for example, in paragraph [0031] which provides an example of ultrasound microbubbles adhering to the adhesion layer via hydrogen bonding due to the hydrophilic surfaces of the microbubbles. The hydrogen bonding between the microbubbles and the adhesion layer makes clear that the microbubbles are directly on the adhesion layer with no intervening layer.

Claim Rejections

Claims 1, 6-8, 11-14, 19-21, and 25-32 were rejected under 35 U.S.C. 102(b) as being anticipated by Violante (U.S. 6,106,473). Claims 1 and 14 were rejected under 35 U.S.C. 102(b) as being anticipated by Jones (U.S. 6,506,156). The remaining claims were rejected under 35 U.S.C. 103(a) as being unpatentable over Violante in view of other references. Applicant submits that amended claim 1, and claims 1-10, 25 and 27-34 are allowable in light of the cited art.

Claim 1 is patentable because none of the cited references, either alone or in combination, discloses, teaches, or suggests ultrasound microbubbles directly on an adhesion layer of the medical device, as required by claim 1. Violante teaches gas bubbles entrapped within a polymer matrix instead of ultrasound microbubbles directly on an adhesion layer. Jones teaches forming void spaces within a polymeric matrix.

Therefore, neither Violante nor Jones teaches or suggests microbubbles directly on an adhesion layer of a device. Further, neither Violante nor Jones recognizes that microbubbles could adhere directly to an adhesion layer via intermolecular forces, e.g., hydrogen bonding, with sufficient force to keep the microbubbles on the device without

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the need of entrapping the bubbles in a polymer matrix (see paragraph [0031] of the application). Therefore, neither reference would lead one skilled in the art to enhance the ultrasonic visualization of a device by coating microbubbles directly on an adhesion layer of the device, as required by claim 1.

The claimed invention is advantageous over the cited references because it provides an easier and more cost-effective method of coating microbubbles on a device without the need of forming a polymer matrix and entrapping gas bubbles within the polymer matrix.

For at least the reasons given above, Applicants submit that claim 1 is patentable over the cited references.

Claims 1-10, 25 and 27-34 depend from claim 1 and are therefore patentable for at least the reasons given by claim 1.

New claim 33 is additionally patentable because none of the cited references teach or suggest "wherein the ultrasound microbubbles have hydrophilic outer surfaces, and the adhesion layer absorbs moisture to adhere the microbubbles directly to the adhesion layer via hydrogen bonding."

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Conclusion

Prompt and favorable action on the merits of the claims is earnestly solicited. Should the Examiner have any questions or comments, the undersigned can be reached at (949) 567-6700.

The Commissioner is authorized to charge any fee which may be required in connection with this Amendment to deposit account No. 15-0665.

Respectfully submitted,
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